

ENERGY EXPENDITURE, ENERGY INTAKE, AND NUTRITIONAL STATUS AMONG FILIPINO FEMALE OLDER PERSONS

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ABSTRACT

Background: Very few data, if at all, are available on the nutritional needs of Filipino older persons to provide an accurate basis for determining their energy requirements and formulating related nutritional guidelines. The present use of the FAO/WHO/UNU (1985) equations and the factorial method to determine energy expenditure needs to be compared with the recently International Atomic Energy Agency (IAEA) - recommended Doubly Labeled Water (DLW) technique using stable isotopes. Under an IAEA–Coordinated Research Program (IAEA-CRP) inter-country grant to the FNRI, these new information and new application skills were made available to the Institute.

Objectives: (1) To assess anthropometric measurements, basal metabolic rate (BMR), total energy expenditure (TEE) and, energy intake of female older persons; (2) To compare the FAO/WHO/UNU method of determining energy expenditure with the DLW method; (3) To compare energy intake with energy expenditure. (4) To compare energy intake with the present recommendations for energy.

Methods: A total of 23 females, 60 years old and over, free-living, willing to participate in the study, and selected based on an IAEA- set criteria were the study participants. Their height, weight, skinfold, waist circumference, and hip circumference were measured. BMR was determined using the 1985 FAO/WHO/UNU equations. TEE was determined using and comparing two methods: the FAO/WHO/UNU equation and the DLW technique. Energy expenditure and dietary intake were determined for 3 weekdays and 2 weekends. Energy expenditure was also measured over 14 days with the DLW. A paired t-test was used to compare energy expenditure measurements using the FAO/WHO/UNU equations and the DLW. **Results:** Waist circumference (78 ± 7 cm) and body mass index (23 ± 2 kg/m²) were within normal levels. The mean BMR among the female elderly was 1147 ± 64 kcal/day. A significant difference was observed between energy expenditure using the FAO/WHO/UNU method (1824 ± 300 kcal/day) and energy expenditure using the DLW (2049 ± 476 kcal/day). Energy intake (1178 ± 311 kcal/day) and energy expenditure were likewise significantly different. In terms of energy and protein adequacy levels, diets of the study participants fell below the RENI (78% and 66%, respectively). **Conclusion:** The FAO/WHO/UNU equation method was not comparable with the DLW method in this study. There was a wide gap between energy intake and energy expenditure that may result in loss of body fat due to mild and short-term deficits in energy intake. **Recommendations:** More studies should be undertaken to gain a better understanding of the energy needs of female older adults. As stated in the Philippine RENI, 2002, “Limitations in the availability of valid data on the older population currently prevent specific recommendations for this group, as reported by the International Dietary Energy Consultative Group on older population”. In addition, values in the Philippine RENI on the older population have been largely derived from foreign recommendations. More studies using the DLW to measure energy expenditure in representative samples of the older persons should be carried out to establish recommendations for this population group and to enable international comparability of energy requirement. Better strategies should be developed for the dietary improvement of the female older persons.

